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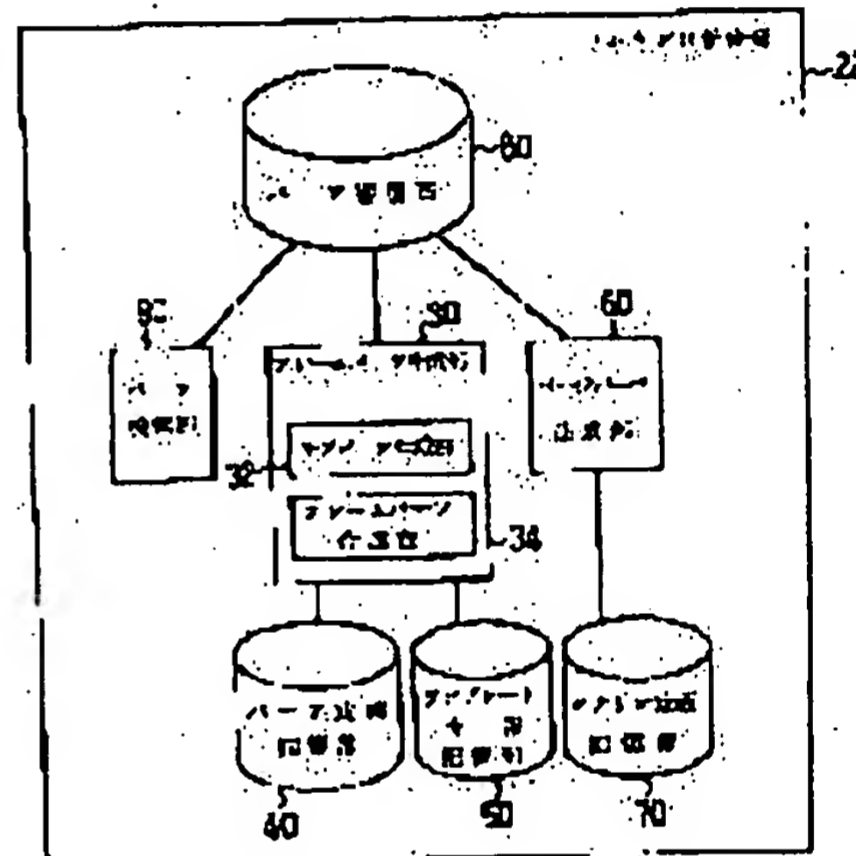
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**(54) DEVICE AND METHOD FOR REPEATING SERVICE****(57)Abstract:**

**PROBLEM TO BE SOLVED:** To display and utilize information and substantial service provide by a text dealing with frame function provided by a server even on a client without dealing with the frame function.

**SOLUTION:** Through the service dealing with the frame function, content documents which are a frame description document and display the contents of respective frames defined by the frame description document are passed from the server to this device. A contact integration part 22 integrates those content documents to generate one content document and provides it for the client. In the content integration part 22, a frame parts generation part 30 edits each content document into frame parts according to parts definition information registered previously in a arts definition storage part 40. A page parts generation part 60 integrates the frame parts according to scenario definition information obtained from a scenario definition information storage part 70 to generate page parts in the form of one content document, and passes them to the client.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to service repeating installation and the service junction approach. Especially, in case this invention provides a client with service by the screen display from a server through a network etc., it relates to the service repeating installation and the service junction approach of changing and providing the format suitable for a client with the layout of a screen display.

[0002]

[Description of the Prior Art] In the Internet, offer of service of various gestalten centering on WWW (World Wide Web) is performed. When using WWW, from a server, information and service are offered with the gestalt of documents, such as a text (henceforth an HTML document) described by HTML (Hyper Text Markup Language). The software called the viewer or browser which operates on a client interprets texts, such as an HTML document sent from a server, generates image information, and displays it on the screen of the computer which is a client, or an information terminal. Once, the image corresponding to one text was displayed on the field (henceforth a display page field) to which a browser displays information on a display. However, recently, a display page field is divided into two or more fields (henceforth a frame field), and the function (it is called a frame function) which can display the image generated by each frame field from the separate text on coincidence is realized.

[0003] An inter-frame display control can also be performed in this frame function. For example, a display page field can be divided up and down, and a title and a LOGO can always be displayed on the frame field set to the upper part of a screen. Moreover, while classifying the field of the lower part into the frame field of further right and left, for example, displaying screen-display contents, such as an index and a table of contents, on a left-hand side frame field, when the text is related with these, respectively and the index etc. was chosen using the mouse etc. on the screen, it was able to be said that the text corresponding to this was acquired and it made it display on a right-hand side frame field. If it does in this way, it is convenient at the point that can make an index etc. always display it on left-hand side as the concrete display information on right-hand side independently, and improvement in operability is achieved.

[0004] This frame function is realized by the frame descriptive text document which described the link to the text displayed on each frame field, and the browser which can interpret this while it defines two or more frame fields all over a display page field.

[0005]

[Problem(s) to be Solved by the Invention] However, this frame function is not a function in which are extension, namely, all browsers correspond as a standard function. Therefore, the client which has a browser corresponding to un-[ frame function ] had the problem that it could not be displayed even if the text described using the frame function is offered. Having to perform separate description conventionally using the HTML no frame tag etc. corresponding to the browser corresponding to un-[ frame function ], this had the problem that it was troublesome at the server side which offers a text.

[0006] Moreover, when the frame function was used, there was a problem that the processing load of a client became high or necessary memory space increased. Therefore, the client which does not fully have those resources could not use a frame function, but having un-arranged [ that the text corresponding to a frame function cannot fully be displayed too ].

[0007] Moreover, the direction of the demerit of being hard coming to see each frame field rather than the merit which mentioned above personal digital assistants, such as PDA (Personal Digital Assistance) which has spread recently, when the display tooth space was restricted, and this was used, the frame function's having divided it becomes remarkable.

[0008] let what was made in order that this invention may cancel the above-mentioned trouble, is connected through a network etc. between a server and a client, relays both, and offers the service repeating installation and the service junction approach of enabling it to display and use the information offered in the text corresponding to the frame function offered from a server, and substantial service also in the client which does not support a frame function be aimed at obtaining .

[0009]

[Means for Solving the Problem] If a server access means obtains from a server the frame descriptive-text document which describes the link definition which specifies the link to the contents document displayed on the frame definition which divides a display page field into two or more frame fields, and each frame field concerned for every frame field of said, in the service cooperation equipment concerning this invention, it will acquire each contents document based on the link further specified as a frame descriptive-text document. A contents integrated means edits a contents document based on the frame descriptive text document obtained from the server, unifies two or more contents documents offered from these servers, and generates one contents document.

[0010] According to this configuration, the browser of a client does not need a frame function that what is necessary is just to display one contents document generated by the contents integrated means. That is, a client can display a contents document, using the display page field as one unit.

[0011] Moreover, with the service cooperation equipment concerning this invention, said contents integrated means components-izes said contents document acquired by said server access means, and it has the parts definition storage section which stores the parts definition information for generating the parts corresponding to the frame which is the parts containing the screen-display contents corresponding to one frame. The parts generation means corresponding to the frame of a contents integrated means generates said parts corresponding to a frame from said contents document acquired by said server access means based on this parts definition information. And the parts generation means corresponding to a page formed in a contents integrated means combines said parts corresponding to a frame, and generates the parts corresponding to the page which is a display unit corresponding to the screen of said browser. These parts corresponding to a page are offered to said client as said contents document generated with said contents integrated means.

[0012] According to this configuration, it is described by one contents document without the need that the information described by two or more contents documents which divided the display page screen and were displayed, and substantial service use conventionally the frame function generated by integration.

[0013] Another contents integrated means concerning the service cooperation equipment of this invention adds the link carbon button which defines the link to said parts corresponding to a frame corresponding to said frame field of the others contained in said parts corresponding to a frame corresponding to said frame field of the arbitration contained to said display page field to the display page field concerned as a parts generation means corresponding to a page, and generates the parts corresponding to the page which is a display unit corresponding to the screen of said browser.

[0014] According to this configuration, conventionally, a display page screen is divided, the information and substantial service which are described by the contents document corresponding to one of two or more frame fields currently displayed on coincidence of arbitration are displayed on a display page field, and the information on the contents document corresponding to other frame fields is not displayed on coincidence. However, the link carbon button which defines the link to the parts corresponding to a frame corresponding to the frame field which is not displayed is added and displayed on this display page field, and a user can display the information and service corresponding to other frame fields on it at any time by operating it. That is, according to this configuration, the parts corresponding to a page with which the link carbon button to the parts corresponding to the frame generated from one contents document of the beginning and other parts corresponding to a frame was unified are generated, and it is provided as one contents document without the need that this uses the frame function to a client.

[0015] It has the scenario definition storage section which defines the joint sequence of said parts corresponding to a frame for said contents integrated means to generate said parts corresponding to a page by service repeating installation concerning this invention which unifies two or more above-mentioned parts corresponding to a frame, and generates one contents document. And based on said scenario definition information, said parts generation means corresponding to a page combines said parts corresponding to a frame, and generates said parts corresponding to a page. By this configuration, if two or more scenario definition information is prepared, they can be chosen freely and joint sequence of the desired parts corresponding to a frame can be realized.

[0016] Furthermore, it has the template information storage section which memorizes the template information which defines by service repeating installation concerning this invention the screen layout of the subpart said whose contents integrated means is the component of said screen-display contents contained in said parts corresponding to a frame.

Said parts generation section corresponding to a frame has a subpart generation means to generate said subpart from said contents document acquired by said server access means, and a parts composition means corresponding to the frame which compounds said parts corresponding to a frame with which the array on the screen of said subpart was described based on said template information.

[0017] A subpart may constitute screen-display contents, for example, you may be a comparatively small element called an element of one carbon button or table, and it may be a comparatively big element called one table here among two or more tables contained in the carbon button and screen-display contents of a single tier. According to this configuration, the parts corresponding to a frame are disassembled into a subpart, and the layout on that screen is changed. Therefore, this equipment can offer the information offered from one server, and service with the display gestalt suitable for the client according to individual by preparing the template information which defined the screen layout according to the display screen of a client.

[0018] Said frame descriptive text document is described by HTML in a mode with the service repeating installation concerning this invention. In HTML, description is carried out in the form of [ of a frame tag ] specification corresponding to each frame field. The link to the contents document corresponding to a frame field is defined as this frame tag. Said server access means detects the frame tag prepared for every frame field of this in said frame descriptive text letter, and acquires the contents document specified as a link place of the frame field concerned.

[0019] Moreover, said parts generation means corresponding to a page defines the link of said link carbon button by the mode with the service repeating installation of this invention which unifies the link carbon button to the one above-mentioned parts corresponding to a frame, and other parts corresponding to a frame using the parts identifier of said parts corresponding to a frame of a link place.

[0020] About the link carbon button which defines the link to said contents document among said subparts, said subpart generation means defines said link by the mode which similarly has the service repeating installation of this invention which makes the above-mentioned link carbon button a subpart using the parts identifier of the contents document concerned with which the link place was components-ized. In this case, in a mode with the service repeating installation of starting this invention, said parts generation means corresponding to a page uses said parts corresponding to a frame generated from said contents document linked to said link carbon button as parts corresponding to a frame corresponding to the display place frame specified as the link carbon button concerned, and generates said parts corresponding to a page.

[0021] Other service repeating installation concerning this invention has a parts are recording means by which said contents integrated means accumulates said generated parts corresponding to a frame. Moreover, as a mode of said parts are recording means, it can constitute so that said parts corresponding to a page or said subpart may be accumulated further. Moreover, when it has a parts retrieval means to search with the service repeating installation concerning another this invention whether said parts corresponding to a frame corresponding to said contents document with which said contents integrated means was linked to said link carbon button are accumulated in said parts are recording means and the parts concerned corresponding to a frame are accumulated in said parts are recording means, the parts concerned corresponding to a frame are acquired from said parts are recording means.

[0022] Thus, on the occasion of generation of the parts corresponding to a page, and the parts corresponding to a frame, parts are reusable with the configuration which accumulates the parts generated once. For example, when the link carbon button displayed all over the display page field is operated, compounding the new parts corresponding to a page using the contents document linked to the link carbon button is performed, but since the parts corresponding to a frame except being called with a link carbon button are not changed at this time, about these, it can acquire from a parts are recording means, and the parts corresponding to a frame can be unified. Moreover, since the contents document linked to the link carbon button may also already be accumulated in the parts are recording means, if this is searched with a parts retrieval means and it is accumulated, it can control the overhead which accesses a server and is acquired by using it.

[0023] By the service junction approach concerning this invention, a frame descriptive text document is described in HTML. And the frame tag of HTML prepared in a frame descriptive text in the letter for said every frame field is detected, and said two or more contents documents specified as a link place of each frame field which corresponds in each of each frame tag are acquired. And said each of this acquired contents document is edited and unified, said one contents document is generated, and it is provided to said client.

[0024]

[Embodiment of the Invention] Next, the operation gestalt of this invention is explained with reference to a drawing.

[0025] Drawing 1 is the block diagram of the outline of the server client system using the service repeating installation which is the gestalt of operation of this invention. The service repeating installation 2 relays the server 4 which offers a

Web Service, and the client 6 which receives the service. The service repeating installation 2 can relay and connect two or more servers 4 and two or more clients 6 here. Directly, service is not required of a server 4 but a client 6 requires it from the service repeating installation 2. Specifically, not URL (Uniform Resource Locator) of a server 4 but URL of the service repeating installation 2 is specified. Therefore, from a user, the service repeating installation 2 is visible to one server.

[0026] The service repeating installation 2 includes the client Division for Interlibrary Services 10 which delivers and receives required information between clients, and the server Division for Interlibrary Services 12 which deliver and receive required information between servers.

[0027] The client Division for Interlibrary Services 10 bears the session management function to manage service by HTTPD which is a demon for communicating by a client 6 and HTTP (HyperText Transfer Protocol), such as a WWW browser, a user's authentication, and a session with a client 6, and the CGI parameter analysis feature which analyzes the CGI parameter sent from the client 6.

[0028] The server Division for Interlibrary Services 12 contains the server access section 20 and the contents integrated section 22. The server access section 20 interprets URL specified from the client 6, accesses the corresponding server 4, and acquires a frame descriptive text document. Description of the frame definition which divides into two or more frame fields one viewing area (display page field) which a browser offers, and definition description of a link in the contents document which describes the contents of a display of the frame field of these plurality (contents) are included in the frame descriptive text document. The server access section 20 also acquires the contents document relevant to this from a server 4 based on the acquired frame descriptive text document.

[0029] The contents integrated section 22 edits and unifies two or more contents documents corresponding to each frame field acquired by the server access section 20, and generates one contents document.

[0030] Now, the vocabulary is clarified when advancing explanation below. In the above description, it has used in the sense of the components containing the screen-display contents corresponding to the whole display page field which means the components which contain fundamentally the screen-display contents corresponding to one frame for the word "parts" corresponding to a frame, and contained two or more frames for the word "parts" corresponding to a page, fundamentally. That is, the parts corresponding to a frame and the parts corresponding to a page are defined corresponding to the range of the contents of a display in a display page field. On the other hand, there is a partition called the frame parts and page parts which were defined on the design of the operation gestalt of this equipment. In almost all cases, two kinds of this partition is in agreement, but it also has an exception. Hereafter, on account of explanation, with frame parts, page parts [ the parts corresponding to a page ] are written again, and suppose that the parts corresponding to a frame are commented each time about an exception case. Drawing 2 is the more detailed block diagram of the contents integrated section 22 which achieves the main characteristic functions of this equipment. Later, detailed work of each component decides to use an example and to explain, and only an outline describes it here. The frame parts generation section 30 components-izes the contents document corresponding to each frame field passed from the server access section 20. Generation of these frame parts is performed in the parts definition storage section 40 based on the parts definition information stored beforehand.

[0031] Furthermore, the frame parts generation section 30 can be considered as the configuration which contains the subpart generation section 32 and the frame parts composition section 34 so that frame parts can be generated with a more flexible layout. The subpart generation section 32 performs components-ization which makes a unit the component of the contents of a screen display described with the acquired contents document. The components of a unit smaller than this contents document are called a subpart here. The generated subpart is compounded by frame parts by the frame parts composition section 34. The frame parts composition section 34 acquires the template information which described the layout of the subpart in the frame parts after composition from the template information storage section 50 on the occasion of this composition, and it compounds frame parts so that a subpart may be displayed with the layout based on it. It is specified for example, as parts definition information which template information is used.

[0032] The page parts generation section 60 unifies frame parts, or adds other parts, and generates the page parts which are components with the information which can be displayed as a page of Web. The scenario definition information that the layout of the frame parts in page parts is defined is beforehand stored in the scenario definition information storage section 70. The page parts generation section 60 takes out the scenario definition information specified for example, for parts definition information from the scenario definition information storage section 70, unifies frame parts based on the scenario definition information, and generates the page parts described as one contents document.

[0033] Further, the various components generated from the frame parts generation section 30, the page parts generation section 60, and the contents document that the subpart generation section 32 obtained from the server 4 are stored in the parts are recording section 80 if needed, and reuse is presented with them. Access to a server 4 can be controlled by

this, and mitigation of a processing load can be aimed at. The parts retrieval section 90 investigates whether desired components are accumulated in the parts are recording section 80, and performs retrieval processing which takes out the component.

[0034] The page parts generated by the contents integrated section 22 are sent to the client 6 of a requiring agency through the client Division for Interlibrary Services 10. Since it is described as one contents document that page parts were already described, it is not necessary to support the frame function as which the browser of a client 6 divides one display page field into two or more frame fields, and displays two or more contents documents on coincidence.

[0035] Drawing 3 -5 are the mimetic diagram showing the example of the screen display generated in texts, such as a contents document, and the text of those. First, drawing 3 shows the text at the time of using a frame function, and the example of a screen display. The display page field 100 which shows the example of a screen display is classified into a total of three frame fields of the frame field located in the upper part, and two frame fields located in the lower left and lower right, respectively. The method of this partition is defined as the frame descriptive text document 102. In this example, it is defined as an up frame, a left lower quadrant frame, and a lower right section frame displaying a title, a menu, and the contents of a display of Maine, respectively. The contents displayed on each [ these ] field are generated from a respectively separate contents document. That is, the screen-display contents which were described by the title contents document 112 in the menu frame field 114, and were described by the Maine contents document 120 in the menu contents document 116 and the mainframe field 118, respectively are displayed on the title frame field 110. Incidentally, the components 130-136 of the screen-display contents displayed on the menu frame field 114 are link carbon buttons. If one of these is operated, the contents document corresponding to the link carbon button will newly be acquired from a server 4, and the contents of a display of the mainframe field 118 will be updated, using it. The gestalt illustrated to this drawing 3 is a gestalt of the Web Service provided with this equipment from a server 4. This equipment is changed into the gestalt of drawing 4 which shows this gestalt below, or drawing 5, and a client 6 is provided with it.

[0036] Drawing 4 is the mimetic diagram showing the first example of the text changed by this equipment so that a frame function might not be used, and a screen display. the display page field 140 is classified into a lengthwise direction to three steps of fields -- having -- the upper case field 142 and the middle -- the frame parts generated from the title contents document 112, the menu contents document 116, and the Maine contents document 120, respectively are displayed on a field 144 and the lower-berth field 146. The text corresponding to this screen display is one page parts document 150 which unified the three above-mentioned frame parts. Arrangement on a par with such a lengthwise direction is easily realized corresponding to processing a text sequentially from the upper line. That is, in this example, the frame parts of a title, the frame parts of a menu, and the frame parts of Maine are described by the page parts document 150 sequentially from a top. The sequence of these frame parts is defined using scenario definition information.

[0037] moreover, the middle shown in drawing 4 although four link carbon buttons (components 130-136) described by the menu contents document 116 at the time of using a frame function were arranged by the vertical single tier -- it is arranged by two-line two trains in the field 144. This makes a subpart the components 130-136 of the menu contents document 116, and shows that those layouts were changed using template information.

[0038] Next, drawing 5 is the mimetic diagram showing the second example of the text changed by this equipment so that a frame function might not be used, and a screen display. two frame parts (a menu and Maine) of the frame parts 162 of a title and others -- the title page document 170 with which the link carbon buttons 164 and 166 through which it passes, respectively were unified is displayed. [ field / 160 / display page ] if the link carbon button 164 of a menu is operated -- the frame parts of a menu, and other two frame parts (a title and Maine) -- the menu page document 172 with which the link carbon button through which it passes, respectively was unified is displayed on a display page field. if the link carbon button 166 of Maine is operated similarly -- the frame parts of Maine, and other two frame parts (a title and menu) -- the Maine page document 174 with which the link carbon button through which it passes, respectively was unified is displayed on a display page field.

[0039] When shown in drawing 5, three texts 170-174 are generated, but since only every one [ these ] is displayed at once, the frame function is unnecessary.

[0040] Next, transform processing to the gestalt shown in drawing 4 from the gestalt shown in drawing 3 is explained in full detail using an example. Drawing 6 is drawing showing an example of the contents of the frame descriptive text document described in HTML. The line number of the expedient upper text of explanation is \*\*ed in the left end of drawing. The definition of the division into the frame field of a display page field is defined by the FRAMESET tag of the 6th line and the 8th line. Moreover, 7 and the FRAME tag of the 9 or 10th line define an assignment of the contents document to a frame field etc.

[0041] If it sees in a detail more, the definition by the FRAMESET tag is to <FRAMESET>- </FRAMESET> of the 6-12th line with the embedded structure of the duplex to <FRAMESET>- </FRAMESET> of the 8-11th line. The definition of this outside defines division of the upper and lower sides of a display page field with the "ROW" parameter specified as the tag of the 6th line. And it is defined by the FRAME tag of the 7th line that the contents document corresponding to the frame field of the upper part of the inside divided up and down is a HTML text "title.htm", and the identifier of a frame is "TitleFrame." Thereby, the title frame field 110 in drawing 3 is defined.

[0042] The definition of a lower frame field is performed in the continuing line. A lower field is divided into the frame field of two right and left by the "COLS" parameter specified as the FRAMESET tag of the 8th line here. And it is defined by the FRAME tag of the 9th line that the contents document corresponding to the frame field on the left of the inside divided into right and left is a HTML text "menu.htm", and an identifier is "MenuFrame", and it is defined by the FRAME tag of the 10th line that the contents document corresponding to a right frame field is "main.htm", and an identifier is "MainFrame." Thereby, the menu frame field 114 and the mainframe field 118 in drawing 3 are defined.

[0043] Drawing 7 -9 are drawing showing an example of the contents of the contents document described in HTML matched with each frame field of the above-mentioned frame descriptive text document, respectively. The line number of a text is \*\*ed in the left end of drawing like drawing 6 . Specifically, drawing 7 shows an example of the title contents document 112 matched with the title frame field 110. Moreover, drawing 8 shows an example of the menu contents document 116 matched with the menu frame field 114. Drawing 9 shows an example of the Maine contents document 120 matched with the mainframe field 118. The support tag <A> described by the 8-11th line and the 8-11th line of the Maine contents document of a menu contents document defines the link to the phase hand specified with the HREF attribute.

[0044] The browser corresponding to a frame function performs a screen display as shown in drawing 3 based on the text shown in drawing 6 -9.

[0045] Next, conversion in the gestalt shown in drawing 4 is explained. Drawing 10 and 11 are drawings showing an example of parts definition information. There are two kinds of parts definitions, a basic service parts definition and an application service parts definition. A basic service parts definition mainly describes the information assignment and which parts of URL of the page of Web to use are registered into the parts are recording section 80. Frame parts and a subpart are generated by this and it is stored in the parts are recording section 80. Moreover, an application service parts definition creates the coulomb of the parts stored in the parts are recording section 80, and performs the definition for customizing the attribute of the coulomb to what specialized in application service, and newly storing in the parts are recording section 80. Furthermore page parts generation is defined and the generated page parts are stored in the parts are recording section 80. Although drawing 10 and the contents shown in 11 constitute one parts definition information in all, they are divided and shown in the part of an application service parts definition shown in the part and drawing 11 of the basic service parts definition shown in drawing 10 on account of illustration.

[0046] In drawing 10 , the 6-14th line bundled with a BASICPAGE tag about a service identifier "fxcityhp" is description about the page which has a page identifier "Entry", and the frame descriptive text document "index.htm" which is the page of URL specified as the 6th line is acquired. Based on a BASICPARTS tag, parts are specified from the acquired page, and the specified parts are registered into the parts are recording section 80 from it. In this example, four parts "ServiceTitle", "TitleFrame", "MenuFrame", and "MainFrame" are registered. That the TYPE attribute specified here in the BASICPARTS tag corresponding to parts "TitleFrame", "MenuFrame", and "MainFrame" is "FRAME" shows that these parts are frame parts.

[0047] Registration of these parts is automatically performed based on a tag frame descriptive text in the letter with this equipment. That is, in the example shown here, the contents document specified as the FRAME tag in the frame descriptive text document "index.htm" shown in drawing 6 is acquired, and the frame parts generation section 30 changes this into frame parts.

[0048] Moreover, the menu contents document 116 "menu.htm" is acquired by URL specified as the 18th line. Therefore, the description by the BASICPAGE tag of the 17-27th line performed to this contents document becomes a thing about the source HTML text of a menu frame. Here, the component of the menu contents document 116 is defined as a subpart using a SUBPARTS tag. The 23rd line detects a tag <A> and starts a tag <Img> and the 24th line as a subpart. The 22nd line packs as a group the set of the subpart <Img> started by doing in this way, and <A>, and defines it as one parts. In this description of the 22nd line, "ID=index%d (i)" generates a group's identifier automatically using the count i of the repeat of the 21st line. That is, according to i= 1, 2 and 3, and --, a group name becomes index1, index2, index3, and --. In addition, if ID attribute is not specified, since the subpart generation section 32 cannot obtain the name specified by [ which is called Above index ] a user, it generates a group identifier automatically completely here also including this part. For example, in the part which performs the first group

definition, names, such as a1, a2, a3, and --, can be attached, and processing in which names, such as b1, b2, b3, and --, are attached can be performed in the part which performs the following group definition.

[0049] Next, the application service parts definition described by drawing 11 is explained. The 31-46th line defines a title frame, a menu frame, and a main frame as page parts, respectively. However, since page parts here are parts which have the contents of a display corresponding to a title frame fundamentally, respectively, it is equivalent to the parts corresponding to the frame substantially mentioned above.

[0050] First, the 31-37th line is the definition about a title frame. In processing here, the frame parts "fxcity.Entry.TitleFrame" accumulated by the 11th line of a basic service parts definition are taken out from the parts are recording section 80, and it is used. The 32 or 33rd line defines generating the parts "TitleFramePage", from the taken-out frame parts. The HTML text which describes support is acquired from frame parts by assignment of "METHOD=anchor", it is slushed into the field "Body", according to the template information of "body.template", and, specifically, parts are generated. Drawing 12 is drawing showing the contents of description of template information "body.template." This template information is beforehand memorized by the template information storage section 50, and it is taken out and it is used.

[0051] On the other hand, the 39th line is the definition about a menu frame, and the template information of "menuparts.template" is taken out from the template information storage section 50, and it is used here. Drawing 13 is drawing showing the contents of description of this template information "menuparts.template." the subparts index1 and index2 and -- which were generated at this template by the 22-25th line of the basic service parts definition shown in drawing 10 -- a TABLE tag -- using -- the middle of drawing 4 -- it is arranged in the table format which it locates in a line with two longitudinal directions at a time as shown in a field 144. Like the menu frame field 114 of drawing 3, if this is arranged to a vertical single tier, it will become longwise, and it aims at evasion of the frame parts of lower-berth field 146 grade others no longer being displayed on the display page field 140 by coincidence.

[0052] The 49-54th line of drawing 11 is description which defines the layout in the display page field of four parts with "ServiceTitle" defined by the basic service parts definition of the 10th above-mentioned line, "TitleFrame" defined by the application service parts definition of the 31-46th line, "MenuFrame", and "MainFrame." This layout is defined by scenario definition information. Scenario definition information is beforehand memorized by the scenario definition information storage section 70, and what was specified with the TEMPLATE attribute of a PART tag is taken out, and it is used. Drawing 14 is drawing showing the contents of description of scenario definition information

"MultiScenario.template." "MultiScenario.template" incorporates the parts which have as an identifier "Title" specified by the 4th line of drawing 14, and the 8th line, and "Scenario%d (i)", and it unifies them so that it may become the sequence of "Title", "Scenario1", "Scenario2", and --. Incidentally, in the PARAM tag of the 50-53rd line of drawing 11, the identifier of "Title", "Scenario1", "Scenario2", and "Scenario3" is given to the four above-mentioned parts, respectively, and "MultiScenario.template" unifies four parts here using these.

[0053] Drawing 15 is drawing showing the contents of description of the page parts document 150 integrated using the above-mentioned parts definition information and template information, and scenario definition information. In this drawing, the 3rd and four lines correspond to "Title" of the 4th line of "MultiScenario.template", and the 8th and nine lines are description corresponding to [ corresponding to "Scenario2" in "Scenario1" and the 11-20th line ] "Scenario3" in the 22-28th line, respectively. The FRAME tag is not used for description of the page parts document 150 integrated and generated by this equipment in this way. Moreover, the page parts document 150 is one text which unified the screen-display contents of the title contents document 112, the menu contents document 116, and the Maine contents document 120 to have been provided as a separate HTML text from the server 4. For this reason, in the client 6 which received offer of the page parts document 150, even if that browser does not support a frame function, the contents of each contents document are displayed on one display page field. Thereby, the user of a client 6 can use the service which a server 4 offers.

[0054] Next, in the display page field which displays the compounded page parts, the general processing at the time of operating a link carbon button is explained. A push on a link carbon button passes URL of the link place defined as the link carbon button, or ID of parts to the parts retrieval section 90 of the contents integrated section 22. It investigates whether the parts retrieval section 90 searches the parts are recording section 80; and the parts corresponding to the display contents already specified as a link place are registered. The parts can be used for screen composition if it exists in the parts are recording section 80.

[0055] On the other hand, when not registering with the parts are recording section 80, or when [ even if registered ] it is judged that it is better for the considerable period to have passed and to acquire from a server 4 anew, the contents document is acquired from a server 4. The frame parts generation section 30 generates frame parts by approach which was already described from the acquired contents document.

[0056] Thus, the frame parts corresponding to the link place of a link carbon button are replaced with the parts of the specified frame field, and a new page parts document is compounded. Since it does not differ from what used parts other than a link place for generation of the former display screen at this time, the parts registered into the former display screen generate time by the parts are recording section 80 can be used.

[0057] The example of processing at the time of operating the link carbon button incidentally defined as the display screen shown in drawing 4 is as follows. for example, the middle of the display page field 140 shown in drawing 4 -- the link carbon button "a momentary rest" in the menu displayed on a field 144 is operated. Drawing 16 is drawing showing the example of a screen display of the action result by having pushed the link carbon button. The contents of a display corresponding to the mainframe parts of a lower-berth field were changed so that it might turn out that the display page field 200 is compared with the display page field 140 of drawing 4. The contents displayed on the lower-berth field 210 in an action result are the parts "break" of the link place of the link carbon button "a momentary rest" described by the 17th line of drawing 15. These parts "break" are generated by the menu frame parts and coincidence which are generated in case screen composition of drawing 4 is performed, and are registered into the parts are recording section 80. namely, -- a menu frame -- parts -- generating -- the time -- drawing 8 -- the -- 11 -- a line -- being shown -- having -- support -- a tag -- < -- A -- > -- description -- " -- < -- A HREF -- = -- " -- break . -- htm -- " -- TARGET -- = -- "MainFrame" -- > -- a moment -- rest -- < -- /-- A -- > -- " -- components ---izing -- having . This will be called carbon button parts. In addition, corresponding to this components-izing, the link place of a link carbon button is defined by the generated menu frame parts by the identifier of the carbon button parts instead of URL.

[0058] If this link carbon button is pushed, the parts are recording section 80 is first searched like the above-mentioned general approach, if there are no parts of the display contents specified as the carbon button parts corresponding to here, based on URL stored in carbon button parts, access will be performed to a server 4, and contents will be acquired. The contents specified as carbon button parts are replaced with the frame parts corresponding to it when the TARGET attribute is specified as the carbon button parts concerned. In this example, since "MainFrame" is specified as the TARGET attribute, it is transposed to the contents of the parts with which description of "Scenario3" of the 22-28th line corresponding to a mainframe was generated from "break.htm" among description of the page parts document 150 shown in drawing 15, consequently the display result of above-mentioned drawing 16 is realized. Drawing 17 is drawing showing the contents of description of the page parts document generated as an action result of having pushed this link carbon button.

[0059] Drawing 18 is the flow Fig. showing the outline of the screen composition processing in this equipment described until now. First, in order that the manager of service repeating installation may arrange without using a frame function, about each frame, when parts definition information, template information, scenario definition information, and others need to be procedural processed, he performs various kinds of definitions called method definition information, and registers with the parts definition storage section 40, the template information storage section 50, and scenario definition information storage section 70 grade (S300). If this equipment reads HTML specified from the client 6 from a server 4, the frame parts generation section 30 will generate frame parts based on a FRAME tag (S310). When the link carbon button is contained in frame parts at this time, it replaces with URL of that link place, and the definition of the link carbon button using the identifier (ID) of the subpart which components-sized description which specifies that URL as a link place name is created (S320). Moreover, the required parts which are generated and are stored in the parts are recording section 80 are taken out (S330). When the TARGET attribute is specified, the acquired parts are used as parts which should be embedded on the corresponding frame. Embedding is performed based on template information. The HTML text compounded by this is passed to a client 6 as service of a server 4 (S340). In a client 6 side, response of inputting into a block or pushing a link carbon button can be performed to the service based on passed HTML, this equipment receives this response, and required processing is performed between a server 4 or the client 6 concerned (S350). In addition, although a HTML text is acquired from a server in the usual Web Service as a result of a user's pushing a link carbon button and a submit carbon button, it is such [ mainly ] a case that a display is performed on the frame which uses the above-mentioned TARGET attribute and is specified.

[0060] Drawing 19 is the flow Fig. showing the outline of screen composition processing when a user operates a link carbon button. If a user clicks a link carbon button (S400), the argument of the HREF attribute of the support of a link carbon button will be interpreted, and it will be recognized which parts were called (S410). Here, if the TARGET attribute is specified as the attribute of parts, parts will be embedded on the frame to which it points, and reconstruction of a page will be performed (S420). If there are no parts required to constitute a page on the occasion of this reconstruction (S430), in order to generate the specified parts, contents will be acquired from URL of a basic service (S440). If parts are assembled, the frame parts corresponding to two or more frames will be compounded according to scenario definition information, and one HTML text will be generated (S450). This HTML text is passed to a client 6

(S460).

[0061]

[Effect of the Invention] Since the service repeating installation of this invention described above receives service of the server by the frame function which classifies one display page field and displays two or more contents documents on coincidence, two or more contents documents which constitute it are edited and unified and it hooks up to a client as one contents document, even if the client does not support a frame function, the effectiveness that the substantial service which a server offers can be used is acquired. Moreover, also in a server, since it is not necessary to prepare and offer separately the contents document in consideration of the client which does not support a frame function, the man day which creation of contents takes is reducible.

[0062] Moreover, by not using a frame function, the processing load of a client is mitigated, and necessary memory space can be controlled, and it becomes possible also for a client with these insufficient resources to give [ of a contents display and service of the text corresponding to a frame function ] this, and the effectiveness that reduction of response time is achieved or a limit of the use application in a memory space side is eased is acquired.

[0063] Furthermore, in the Personal Digital Assistant to which display tooth spaces, such as PDA, were restricted, since it is not necessary to divide a screen per frame, the effectiveness that a display becomes legible is also acquired.

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[Translation done.]

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